

**ABSTRACT OF THE DISCLOSURE**

A system and method for performing pilot tone based timing recovery in a communication system using the discrete multi-tone (DMT) modulation. In DMT modulation, interference is introduced to the phase of the pilot tone in the transmitter due to the cyclic prefix. Broadly, a receiver is configured to detect and apply a phase offset to the pilot tone in a phase locked-loop upon recognition of far-end signal segments during transceiver initialization. The output of the phase locked-loop is then used to control the timing of the analog-to-digital (A/D) and digital-to-analog (D/A) conversions. In alternative embodiments, the receiver is configured to detect and remove the cyclic prefix from the far-end signal either prior to, or after, time-domain equalization. In a similar manner, the resulting signal stream is applied to the input of the timing recovery phase locked-loop (PLL). The output of the PLL is used to control the timing of the A/D and D/A converters. In a further alternative embodiment, a phase error on the pilot tone is estimated in the frequency domain. The phase error is then applied to the input of a modified timing recovery PLL to reduce phase interference on the pilot tone.